2002-714762/78 D21 E24 (E19) **WELA 2002.04.20**
WELLA AG *DE 20206274-U1
2002.04.20 2002-U2006274(+2002DE-U2006274) *(2002.08.14)* A61K 7/13

New 2,3-diaminophenol derivatives, useful as coupler components in the oxidative dyeing of keratin fibers in light- and wash-fast shades

C2002-202850

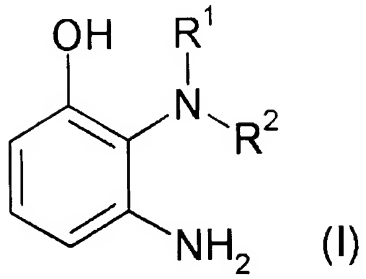
D(8-B6) E(5-E1, 6-A2E, 7-A1, 7-A2E, 7-D, 7-E3, 10-A15A, 10-A15E, 10-A18A, 10-A24A, 10-B1A1, 10-B1A2, 10-B2A1, 10-B2A3, 26-A3)

NOVELTY

2,3-Diaminophenol derivatives (I) or their physiologically-acceptable water-soluble salts are new.

DETAILED DESCRIPTION

2,3-Diaminophenol derivatives of formula (I) or their physiologically-acceptable water-soluble salts are new:



(I)

R^1 and R^2 = H, 2-6C optionally unsaturated alkyl, acetyl, 1-4C alkoxy, hydroxyalkyl, aminoalkyl, dimethylaminoalkyl, acetylaminoalkyl, cyanoalkyl, carboxyalkyl or aminocarbonylalkyl, 2-4C dihydroxyalkyl, 1-4C alkoxy-1-4C alkyl, pyridylmethyl, furyl, tetrahydrofuryl, methylfuryl, methyltetrahydrofuryl, substituted pyridyl or a group of formula (II) - (IV) or R^1 and R^2 together with

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the N atom form a heterocyclic group of formula (V) - (VIII), with the proviso that at least one of R^1 and R^2 is not H;

R^3 = H, carboxyl or aminocarbonyl;

R^4 and R^5 = H, OH, aminocarbonyl, methylthiomethyl, phenyl substituted by phenyl or OH, N-morpholinyl, N-pyrrolidonyl or n-imidazolyl;

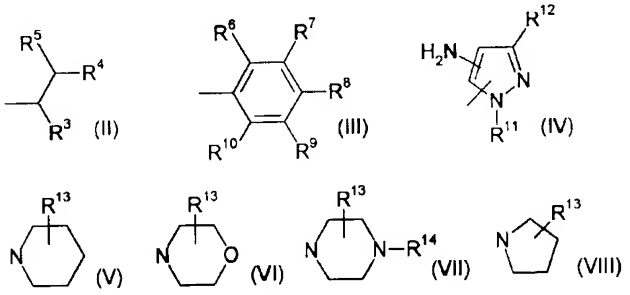
R^6-R^{10} = H, halogen, CN, OH, 1-4C alkoxy, hydroxyalkoxy, alkylthio or hydroxyalkyl, 1-4C hydroxyalkoxy-1-4C alkyl, mercapto, NO_2, amino, mono- or di-alkylamino, hydroxyalkylamino, di(hydroxyalkyl)amino, (dihydroxyalkyl)amino, (hydroxyalkyl)alkylamino, CF_3, formyl, acetyl, trifluoroacetyl, trimethylsilyl or 2-4C dihydroxyalkyl or two adjacent R^6-R^{10} groups form an -O-CH_2-O- group;

R^{11} = H or 1-4C alkyl or hydroxyalkyl;

R^{12} = H or 1-6C alkyl;

R^{13} = H, OH, carboxy, aminocarbonyl or 1-4C alkoxy; and

R^{14} = H or 1-6C alkyl.



(II) (III) (IV) (V) (VI) (VII) (VIII)

USE

Claimed use is together with developers in the oxidative dyeing of keratin fibers, especially human hair, the amount of (I) being 0.005-20 wt.%.

ADVANTAGE

The new couplers give intense dyeing with high light- and wash-fastness when used in combination with known developers. Preparation is by known methods, e.g. by coupling Br-substituted 3-

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aminophenol derivatives with primary or secondary amines, followed by splitting off the protective group, or by reduction of the corresponding nitro compound.

SPECIFIC COMPOUNDS

14 Compounds (I) are specifically claimed e.g. 3-amino-2-(3-aminophenylamino)phenol, 3-amino-2-pyrrolidin-1-yl-phenol, 1-(6-amino-2-hydroxyphenyl)-piperidin-4-ol and 3-amino-2-(2-methoxyethylamino)-phenol.

EXAMPLE

A composition (10 g), which when used with 6% H_2O_2 solution (10 g) to treat hair for 30 minutes at 40°C, gave a brown-gray shade, comprised 3-amino-2-(2-hydroxyethylamino)phenol dihydrochloride (1.25 mmol); 2,5-diaminotoluene sulfate (1.25 mmol); 28% aqueous solution of laurylethersulfate (10 g); 22% aqueous ammonia (9 g); EtOH (7.8 g); ascorbic acid (0.3 g); di-Na ethylenediaminetetraacetate (0.3 g); and water (balance to 100 g).

TECHNOLOGY FOCUS

Organic Chemistry - Preferred Compositions: Oxidative dyes containing (I) as couplers have pH 6.5-11.5 and may also contain a direct dye, the total amount of coupler + developer being 0.005-20 wt.%. Among the 57 developers listed in the claims are 1,4-diaminobenzene, 4-dimethylamino-aniline, 1,4-bis[(4-aminophenol)amino]-butane, 4-amino-2-Me-phenol, 2,4,5,6-tetraaminopyrimidine, 4,4-diamino-1-Me-1H-pyrazole and 1,2,4-trihydroxybenzene.

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